

THREE NEW OPIINAE SPECIES FROM INDIA
(HYMENOPTERA: BRACONIDAE)

J. Papp

Zoological Department, Hungarian Natural History Museum
Budapest, Hungary

Abstract

Three new Opiine species from India are described: *Biosteres townesi*, n. sp., *Opius marjorieae*, n. sp. and *Opius townesianus*, n. sp., with 12 figures.

Dr. G. Topal, Mammologist of the Hungarian Natural History Museum, Budapest, had been on two collecting trips in India during 1966-1967 and 1979-1980 for one year each. He had collected animals for the museum and among this material there are about 150-200 specimens of Braconid wasps. From among the Opiinae four specimens proved to represent three new species: *Biosteres (Biosteres) townesi*, n. sp., *Opius (Apodesmia) marjorieae*, n. sp. and *Opius (Utetes) townesianus*, n. sp. They are described below and the specific differences are tabulated indicating the nearest related species. The descriptions are accompanied with 12 original figures.

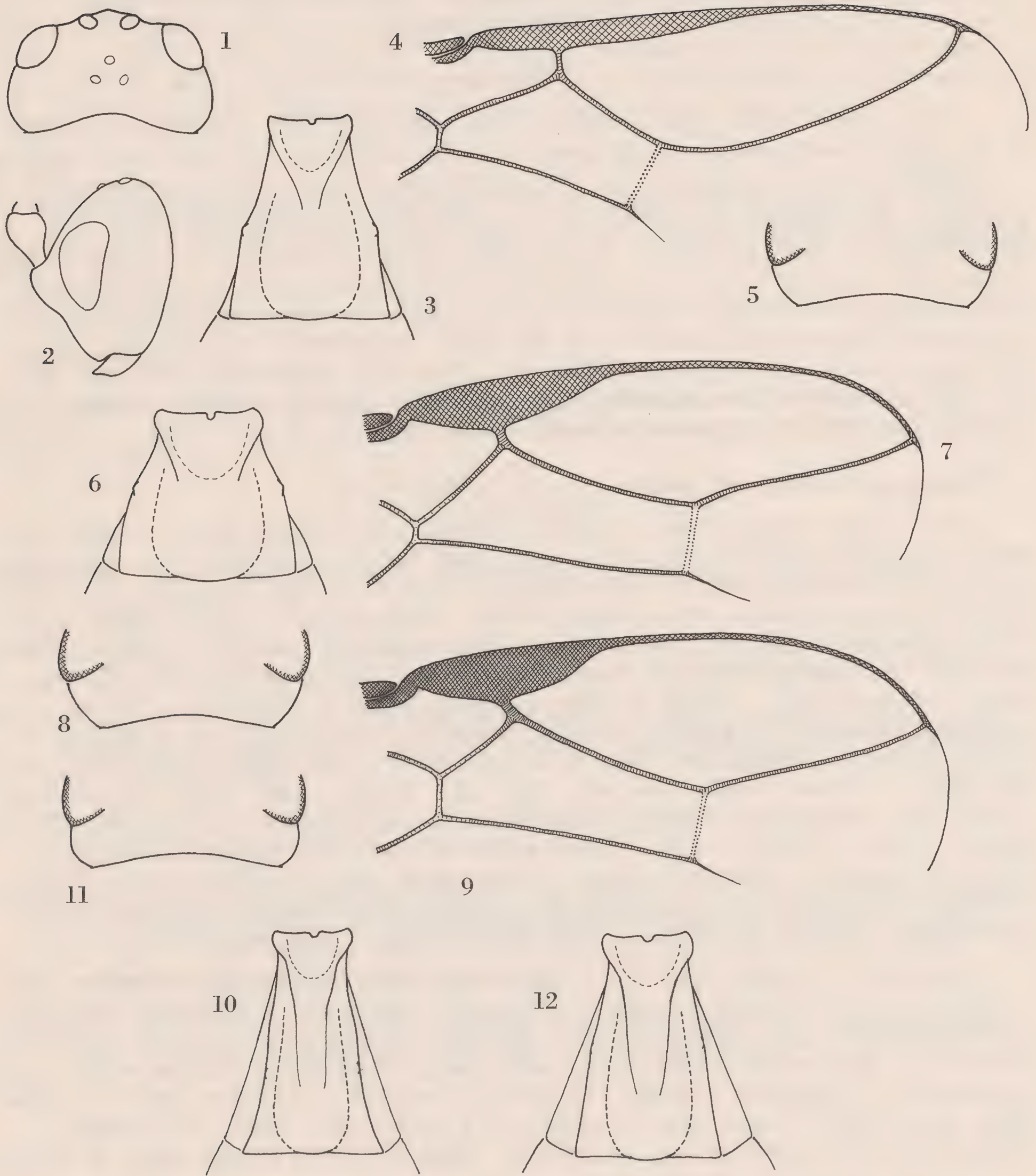
1. *Biosteres (Biosteres) townesi*, n. sp. (Figs. 1-4)

Male: Body 3.2 mm ong. Head in dorsal view almost twice broader than long, temple 1.7 times longer than eye, head behind eyes distinctly broadening, i.e., head between temples clearly broader than between eyes (Fig. 1). Toruli slightly nearer to each other than to eye. Face together with clypeus one-third wider than high. Clypeus thrice wider below than high medially. Distance between tentorial pits almost twice greater than distance between a pit and lowest point of eye. Cheek as long as basal width of mandible. Mouth closed. Mandible gradually broadening basally, below its basal half with a strong rim ending somewhat angularly. Eye in lateral view twice higher than wide, temple distinctly 1.5 times wider than eye (Fig. 2). Ocelli rather small, distance between two ocelli equal with greatest diameter of elliptic hind ocellus. OOL almost thrice as long as P9L. Head polished, face and clypeus with shallow hair punctures. Antenna somewhat longer than body, with 35 joints. First flagellar joint thrice as long as broad, further joints slightly shortening and attenuating so that penultimate joint also thrice as long as broad.

Mesosoma in lateral view 1.4 times longer than high. Mesonotum as long medially as wide between tegulae. Notaulix restricted to declivous part of mesonotum and here shallow to very shallow, on disc of mesonotum notaulix indistinct. Mesonotal dimple linear and deep. Prescutellar furrow with weak crenulation. Postaxille smooth. Propodeum smooth, its lateral spiracle somewhat protruding. Sternaulix indicated by a very feeble linear impression. Hind femur 3.6 times as long as broad. Hind tibia and tarsus equal in length.

Fore wing somewhat longer than body. Stigma (Fig. 4) linear in form, i.e., its sides parallel and issuing radial vein from its proximal half. r1 about as long as width of stigma, r2 somewhat shorter than cu1, r3 thrice as long as r2 and ending before tip of wing. Cu2 narrowing distally, n. rec. post-furcal (Fig. 4). d distinctly 1.4 times longer than n. rec., B. closed.

Metasoma about as long as head + mesosoma together. First tergite (Fig. 3) somewhat longer than wide at hind, twice wider behind than basally, with



Figs. 1-4. *Biosteres (Biosteres) townesi*, n. sp. Male: 1, Head in dorsal view. 2, Head in lateral view. 3, First tergite. 4, Distal part of right fore wing. Figs. 5-7. *Opius (Apodesmia) marjorieae*, n. sp. Female: 5, Head in dorsal view. 6, First tergite. 7, Distal part of right wing. Figs. 8-10. *Opius (Utetes) townesianus*, n. sp. M, F : 8, Head in dorsal view behind eyes. 9, Distal part of right fore wing. 10, First tergite. Figs. 11-12. *Opius (Utetes) infernalis* Fischer: 11, Head in dorsal view. 12, First tergite.

a pair of converging keel on its basal half. Surface of hind half of first tergite shiny and with very fine longitudinal rugulo-striation. Further tergites polished.

Head and metasoma dark brown, mesosoma brownish yellow. Clypeus, mandible and temple below brownish yellow, flagellum blackish brown, palpi pale. Mesopleuron, metanotum and propodeum dark brown to brown. Second tergite brownish yellow. Legs brownish yellow, hind tibia and tarsus rather yellow. Wings hyaline. Stigma and venation brownish yellow.

Female and host: Unknown.

Holotype: Male, India: West Bengal, Senchal Reserve Forest, Ghum, 2200 m, 22 October 1967, leg. Topal, No. 886.

Holotype is deposited in Hungarian Natural History Museum, Budapest; Hym. Typ. No. 5312.

The new species is dedicated to Dr. Henry Townes.

From among the Indo-Australian *Biosteres* species the new species seems closely allied with *Biosteres (B.) kashmirensis* (Fischer 1966). They may be distinguished by the following features:

B. townesi

1. Head in dorsal view behind eyes broadening, i.e., head between temples distinctly broader than between eyes (Fig. 1).
2. Temple in dorsal view 1.7 times longer than eye (Fig. 2).
3. Antenna with 35 joints, first flagellar joint thrice, penultimate joint also thrice longer than broad.
4. R ending before tip of wing (Fig. 4).
5. Propodeum smooth, shiny.
6. Head and metasoma dark brown, mesosoma brownish yellow.

B. kashmirensis

1. Head in dorsal view behind eyes not broadening, i.e., head between eyes and temples about equal breadth.
2. Temple and eye in dorsal view of equal length.
3. Antenna with 45 joints, first flagellar joint 2.5 times and penultimate joint 1.5 times longer than broad.
4. R reaching tip of wing.
5. Propodeum rugulose, dull.
6. Head and mesosoma black, metasoma reddish brown.

2. *Opius (Apodesmia) marjorieae*, n. sp. (Figs. 5 - 7)

Female: Body rather stout, 2.2 mm long. Head in dorsal view transverse, 2.1 times broader than long, eye 2.5 times longer than temple, head behind eyes strongly rounded (Fig. 5). Toruli nearer to eye than to each other. Face together with clypeus indistinctly wider than high. Clypeus 2.5 times wider below than high medially. Distance between tentorial pits twice greater than distance between a pit and lowest point of eye. Cheek somewhat shorter than basal width of mandible. Mouth open. Mandible gradually broadening basally, i.e., without subtooth at its lower base. Eye in lateral view 1.9 times higher than wide, eye twice wider than greatest width of temple. Ocelli average in size; distance between fore and a hind ocelli equal with

greatest diameter of elliptic hind ocellus; distance between hind two ocelli somewhat shorter than diameter indicated. OOL twice as long as POL. Head polished. Antenna about as long as body, with 23 joints. First flagellar joint twice, penultimate joint 1.5 times as long as broad, flagellum distally not attenuating.

Mesosoma in lateral view only somewhat longer than high. Mesonotum one-fifth wider between tegulae than long medially. Notaulix restricted to declivous part of mesonotum, deep, on disc of mesonotum absent. Mesonotal dimple round, deep. Postaxille entirely smooth, shiny. Propodeum rugose. Sternaulix short, crenulated. Hind femur four times longer than broad. Hind tarsus somewhat shorter than hind tibia.

Fore wing somewhat longer than body. Stigma not wide, four times as long as wide, issuing radial vein close before its middle (Fig. 7); r1 short, r2 1.7 times longer than cuqul, r3 somewhat longer than r2 and reaching tip of wing. Cu2 narrowing distally, n. rec. postfurcal (Fig. 7). d twice as long as n. rec., B closed.

Metasoma somewhat longer than mesosoma. First tergite (Fig. 6) slightly wider at hind than long medially, evenly broadening posteriorly; basal converging pair of keel relatively short and merging into median and rather longitudinal rugosity, lateral surface almost smooth to smooth, shiny. Second tergite with a pair of posteriorly diverging furrow at its fore middle, otherwise together with further tergites polished. Tergites 2-3 fused. Ovipositor sheath in lateral view very short, as long as second joint of hind tarsus.

Body black, legs yellow. Clypeus, labrum and mandible reddish yellow, palpi and galea yellow. Scape and pedicel yellow, flagellum blackish. Tegula brown, parategula brownish yellow. Middle femur faintly brownish; hind femur brown, basally and apically yellow. Last joint of tarsi 2-3 brownish, claws and pulvilli blackish. Wings hyaline, stigma and veins with brown pigmentation.

Male and host: Unknown.

Holotype: Female, India: Karnataka, Balgaum district, Talewadi, 780 m, netting in grasses, 26 February 1980, leg. Topal, No. 135.

Holotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 5313.

The new species is dedicated to Mrs. Marjorie Townes.

Within the subgenus *Apodesmia* Foerster so far two species were reported from the Indo-Australian Region. The new species, *O. marjorieae* may be separated from them as in the key below:

1. First tergite 1.8 times longer than broad at hind. Fore wing hyaline, below stigma with a brown streak. Head and mesosoma densely haired. Propodeum rugo-rugulose, with a pair of lateral smooth field. In dorsal view eye one-fifth longer than temple. Antenna with 42-43 joints. 4.2-4.5 mm. Taiwan *maculipennis* Enderlein
- First tergite as long as wide at hind or slightly wider behind than long (Fig. 6). Fore wing hyaline, without brown streak below stigma. Head and mesosoma not densely haired. Propodeum evenly rugose, without lateral smooth field. In dorsal view eye at least twice as long as temple. Antenna at most with 30 joints 2

2. Second tergite polished. r2 1.7 times longer than cuq1, r3 only somewhat longer than r2, stigma less wide (Fig. 7). Antenna with 23 joints, first flagellar joint twice, penultimate joint 1.5 times as long as broad. Postaxille smooth and shiny. Scape and pedicel yellow. Body black, legs yellow, hind femur brown. 2.2 mm. F. India
 *marjorieae*, n. sp.
 Second tergite longitudinally striated. r2 1.25 times longer than cuq1, r3 2.5 times longer than r2, stigma wide (Abb. 4, in Fischer 1978: 375). Antenna with 30-32 joints, first flagellar joint 2.7 times, penultimate joint 1.66 times as long as broad. Inner margin of postaxille crenulate. Scape and pedicel black. Body reddish brown, tegulae and legs yellow. 2.8 mm. M, F. *formosigaster* Fischer

3. **Opius (Utetes) townesianus**, n. sp. (Figs. 8-10)

Female: Body 3.2 mm long. Head in dorsal view 1.8-1.9 times broader than long, eye twice as long as temple, head behind eyes contracted (Fig. 8). Face together with clypeus slightly wider than high medially. Clypeus twice wider below than high medially. Distance between tentorial pits twice greater than distance between a pit and lowest point of eye. Mouth open. Mandible gradually broadening basally, i.e., without subtooth at its lower base. Eye in lateral view 1.4 times higher than wide, eye almost twice wider than greatest width of temple. Ocelli relatively large and elliptic in form, distance between fore and a hind ocelli somewhat shorter than greatest diameter of hind ocellus. OOL nearly thrice as long as POL. Head polished, clypeus punctate. Antenna one-quarter longer than body, with 36 joints. First flagellar joint 2.5 times as long as broad, further joints gradually shortening and attenuating so that penultimate joint twice as long as broad.

Mesosoma in lateral view 1.3-1.4 times longer than high. Thorax polished. Mesonotum as long medially as wide between tegulae. Propodeum with a medio-longitudinal carina, medially rugo-rugulose, laterally almost smooth to smooth. Notaulix restricted to declivous part of mesonotum. Mesonotal dimple before prescutellar furrow round and deep. Sternaulix rather narrow and moderately crenulated. Hind femur distinctly four times longer than broad. Hind tibia and tarsus equal in length.

Fore wing as long as body. Stigma (Fig. 9) 3.5 times as long as wide, emitting radial vein from its middle. r1 short, r2 twice as long as cuq1, r3 one-fifth longer than r2 and reaching tip of wing. Cu2 narrowing distally, n. rec. distinctly postfurcal (Fig. 9). d almost twice as long as n. rec., B closed.

Metasoma in lateral view slightly longer than mesosoma. First tergite (Fig. 10) distinctly 1.5 times longer than wide at hind, moderately broadening posteriorly, before its hind end strongly broadening; pair of keel converging at its fore third, its further section subparallel. Surface between keels and of hind third rugo-rugulose, otherwise first tergite smooth, shiny. Further tergites polished. Ovipositor sheath in lateral view short, half as long as hind tibia.

Ground color of body black, legs yellow. Clypeus, labrum and mandible brownish yellow, palpi yellow. Surface around toruli rusty. Scape and pedicel yellow, flagellum black. Tegulae yellow, parategulae pale yellow.

Coxae whitish yellow, distal half of middle tibia and entire hind tibia dark fumous, claws and pulvilli blackish. Tergites 3-6 with rusty transverse bands, tergites 7-8 yellow. Sternites brown to light brown. Wings hyaline. Stigma with blackish, venation with blackish brown pigmentation.

Male: Similar to the female. Body 3.3 mm long. Antenna with 34 joints. Legs more whitish yellow. Hind tarsus black.

Holotype: Female, and *allotype*: 1 male, India: West Bengal, Darjeeling district, Debrapani, 1700 m, netted in grass vegetation, 29 May 1980, leg. Topal, No. 427.

Holotype and allotype are deposited in the Hungarian Natural History Museum, Budapest; Hym. Trip. No. 5314 (holotype) and 5315 (allotype).

The new species is dedicated to Dr. Henry Townes.

The new species, *O. townesianus*, n. sp., seems closely related to *O. sanguanus* Fischer, 1966 (Nepal), the specific differences between them are few and difficult to recognize. They are tabulated below:

O. townesianus

1. Body 3.2 - 3.3 mm long.
2. Antenna with 34-36 joints.
3. Mesonotum as wide as long.
4. First tergite moderately broadening posteriorly, and strongly broadening close before its hind end.
5. r3 only one-fifth as long as r2 (Fig. 9).
6. Temple in dorsal view distinctly half as long as eye (Fig. 8).

O. sanguanus

1. Body 2.1 mm long.
2. Antenna with 23 joints.
3. Mesonotum somewhat though distinctly wider than long.
4. First tergite evenly broadening posteriorly (Abb. 66, in Fischer 1966: 106).
5. r3 1.5 times as long as r2 (Abb. 64, l.c.).
6. Temple in dorsal view somewhat shorter than eye.

O. townesianus is close to *O. infernalis* Fischer, 1966 (Philippines, Taiwan). They differ as follows:

O. townesianus

1. Head in dorsal view behind eyes rather constricted (Fig. 8).
2. Ovipositor sheath in lateral view short, half as long as hind tibia.
3. First tergite moderately broadening posteriorly and strongly broadening close before its hind end (Fig. 10).
4. Ground color of head and mesosoma black, head around toruli rusty (M) or reddish yellow (F).

O. infernalis

1. Head in dorsal view behind eyes rounded (Fig. 11).
2. Ovipositor sheath in lateral view long, one-sixth longer than hind tibia.
3. First tergite rather evenly broadening posteriorly (Fig. 12).
4. Ground color of head and thorax reddish to brownish yellow with more or less black pattern.

Considering the somewhat elongated mesosoma of *O. townesianus*, it runs to *O. nepalensis* Fischer, 1966 (Nepal) in Fischer's key for the Indo-Australian species of the genus *Opius*. These two species are separated below:

O. townesianus

1. Mesosoma in lateral view 1.3 -1.4 times longer than high.
2. Body 3.2 -3.3 mm long.
3. Stigma issuing radial vein from its middle (Fig. 9).
4. Antenna 34-36 jointed. Penultimate joint of antenna twice as long as broad.
5. Entire flagellum blackish.

O. nepalensis

1. Mesosoma in lateral view distinctly 1.5 times longer than high.
2. Body 1.7 mm long.
3. Stigma issuing radial vein from its basal third.
4. Antenna 19-21 jointed, usually with 20 joints. Penultimate joint of antenna thrice as long as broad.
5. Last 4-6 joints of flagellum whitish, otherwise flagellum blackish.

Fischer (1980) recently described *Opius (Utetes) mudigerensis* from South India, which also seems allied to *townesianus*. They differ as follows:

O. townesianus

1. Body 3.2 -3.3 mm long (M, F).
2. First tergite distinctly 1.5 times longer than wide at hind (Fig. 10)
3. Ovipositor sheath short, in lateral view half as long as hind tibia.
4. Basal flagellar joints relatively long, first joint 2.5 times as long as broad.
5. Mesonotum as long medially as wide between tegulae.

O. mudigerensis

1. Body 4 mm long (F).
2. First tergite 1.25 times longer than wide at hind (Abb. 3, in Fischer 1980: 175).
3. Ovipositor sheath long, in lateral view as long as hind tibia.
4. Basal flagellar joints relatively short, first joint twice as long as broad.
5. Mesonotum 1.2 times wider between tegulae than long medially (Abb. 1, l.c.).

REFERENCES

- Enderlein, G. 1912. H. Sauter's Formosa-Ausbeute. Braconidae, Prototrupidae und Evaniidae (Hym.). Entomol. Mitt. 1(9): 257-267.
- Fischer, M. 1966. Revision der Indo-Australischen Opiinae (Hymenoptera, Braconidae). Ser. Entom. 1: I-VI = 1-167.
- Fischer, M. 1967. Redeskriptionen von einigen Opiinen (Hymenoptera, Braconidae). Zschr. Arb. gem. Osterr. Entom. 19(2-3): 59-69.
- Fischer, M. 1971a. Opiinae aus Neu-Guinea und von den Bismarck-Inseln (Hymenoptera: Braconidae). Pacific Ins. 13(3-4): 487-512.
- Fischer, M. 1971b. Die Opiinae der Noona Dan Expedition nach den Philippinen und Bismarck-Inseln und Redeskription von *Opius dissitus* aus Hawaii (Insecta, Hymenoptera, Braconidae). Steenstrupia 2: 1-25.

- Fischer, M. 1975. Drei orientalische Opiinen (Hymenoptera, Braconidae) aus der Sammlung Townes. Zschr. Arb. Gem. Osterr. Entom. 27(1-2): 47-52.
- Fischer, M. 1978. Neue Opiinae (Hymenoptera, Braconidae) von der australischen Region, besonder aus Tasmanien. Polskie Pismo Entom. 48: 371-412.
- Fischer, M. 1980. *Opius mudigerensis* n. sp., eine neue Braconide aus Indien (Hymenoptera, Braconidae, Opiinae). Steestrupia 6(11): 173-176.
- Papp, J. 1982. Taxonomical and faunistical novelties of the Opiinae in the Arctogaea (Hymenoptera, Braconidae). Ann. Hist. Nat. Mus. Nat. Hung. 74: 241-253.